

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

1 1. (Currently Amended) A method applicable within a mobile communication
2 system for adaptively allocating a downlink data rate to an access terminal to compensate for
3 channel fading, said method comprising:

4 selecting a downlink data rate in accordance with a determined signal-to-noise
5 level, wherein said downlink data rate is associated with a specified signal-to-noise threshold
6 value to achieve a specified packet error rate; rate, wherein selecting the downlink data rate
7 comprises:

8 comparing said determined signal-to-noise level with a plurality of signal-
9 to-noise threshold values, wherein each of said plurality of signal-to-noise threshold values is
10 associated with a downlink data rate; and

11 selecting a highest downlink data rate corresponding to two or more of
12 said plurality of signal-to-noise threshold values that do not exceed said determined signal-to-
13 noise level, wherein said mobile communication system includes selectable data rate control sets
14 in which each of said plurality of signal-to-noise threshold values is associated with a
15 corresponding downlink data rate for said specified packet error rate, and wherein selecting the
16 highest downlink rate comprises:

17 comparing the relative values of said two or more signal-to-noise
18 threshold values; and

19 selecting a data rate control set corresponding to the lowest among said
20 two or more signal-to-noise threshold values.

21 ~~transmitting~~ receiving a packet ~~to an~~ by the access terminal at said selected
22 downlink data rate;

23 responsive to successfully decoding said packet, decreasing the signal-to-noise
24 threshold value specified for said selected downlink data rate; and

25 responsive to unsuccessfully decoding said packet, increasing the signal-to-noise
26 threshold value specified for said selected downlink data rate, said increasing the signal to noise
27 threshold value specified for said selected downlink data rate comprising:

28 computing an increased signal-to-noise threshold value specified for said
29 selected downlink data rate in accordance with the relation:

30
$$T = T_j + \Delta_{local}$$

31 wherein T represents the increased signal-to-noise threshold value
32 associated with the selected downlink data rate, T_j represents the current signal-to-noise
33 threshold value associated with the selected downlink data rate, and Δ_{local} represents a local data
34 rate control delta value.

1 2. (Original) The method of claim 1, wherein said determined signal-to-noise level
2 at said access terminal is a ratio of the signal strength of an allocated access terminal channel to
3 the combined external signal strength.

1 3. (Original) The method of claim 1, wherein said selecting a downlink data rate is
2 preceded by determining a signal-to-noise level at said access terminal.

1 4. - 7. (Cancelled)

1 8. (Currently Amended) The method of claim 1, ~~wherein said mobile~~
2 ~~communication system includes selectable data rate control sets in which each of said plurality of~~
3 ~~signal-to-noise threshold values is associated with a corresponding downlink data rate for said~~
4 ~~specified packet error rate, said method further comprising:~~

5 responsive to unsuccessfully decoding said packet, increasing each of said
6 plurality of signal-to-noise threshold values in accordance with the relation:

7
$$T = T_i + \Delta_{global}$$

 wherein T represents the increased value for the i^{th} signal-to-noise threshold value
among said plurality of signal-to-noise threshold values, T_i represents current value for the i^{th}
signal-to-noise threshold value among said plurality of signal-to-noise threshold values, ~~PER~~
~~represents said specified packet error rate,~~ and Δ_{global} represents a global data rate control delta
value.

1 9. (Currently Amended) A method applicable within a mobile communication
2 system for adaptively allocating a downlink data rate to ~~an~~ a mobile access terminal to
3 compensate for channel fading, said method comprising:

4 selecting, by the mobile access terminal, a downlink data rate in accordance with
5 a determined signal-to-noise level, wherein said downlink data rate is associated with a specified
6 signal-to-noise threshold value to achieve a specified packet error rate;

7 ~~transmitting~~ receiving a packet by the mobile ~~to an~~ access terminal at said
8 selected downlink data rate; and

9 responsive to successfully decoding said packet, the mobile access terminal
10 decreasing the signal-to-noise threshold value specified for said selected downlink data rate, said
11 decreasing the signal-to-noise threshold value specified for said selected downlink data rate
12 comprising:

13 computing a decreased signal-to-noise threshold value specified for said
14 selected downlink data rate in accordance with the relation:

$$T = T_j - (PER * \Delta_{local})$$

16 wherein T represents the decreased signal-to-noise threshold value
17 associated with the selected downlink data rate, T_j represents the current signal-to-noise
18 threshold value associated with the selected downlink data rate, PER represents said specified
19 packet error rate, and Δ_{local} represents a local data rate control delta value.

1 10. (Original) The method of claim 9, wherein said mobile communication system
2 includes selectable data rate control sets in which each of said plurality of signal-to-noise
3 threshold values is associated with a corresponding downlink data rate for said specified packet
4 error rate, said method further comprising:

5 responsive to successfully decoding said packet, decreasing each of said plurality
6 of signal-to-noise threshold values in accordance with the relation:

$$T = T_i - (PER * \Delta_{global})$$

8 wherein T represents the decreased signal-to-noise threshold, T_i represents the i^{th}
9 signal-to-noise threshold value among said plurality of signal-to-noise threshold values, PER

10 represents said specified packet error rate, and Δ_{global} represents a global data rate control delta
11 value.

1 11. (Currently Amended) A mobile communication system for adaptively allocating
2 a downlink data rate to an access terminal to compensate for channel fading, said mobile
3 communication system comprising:

4 processing means for selecting a downlink data rate in accordance with a
5 determined signal-to-noise level, wherein said downlink data rate is associated with a specified
6 signal-to-noise threshold value to achieve a specified packet error rate; rate, wherein said
7 processing means for selecting a downlink data rate comprises:

8 processing means for comparing said determined signal-to-noise level
9 with a plurality of signal-to-noise threshold values, wherein each of said plurality of signal-to-
10 noise threshold values is associated with a downlink data rate; and

11 processing means for selecting a highest downlink data rate corresponding
12 to two or more of said plurality of signal-to-noise threshold values that do not exceed said
13 determined signal-to-noise level;

14 memory containing selectable data rate control sets in which each of said plurality
15 of signal-to-noise threshold values is associated with a corresponding downlink data rate for said
16 specified packet error rate;

17 wherein said processing means for selecting the highest downlink data rate
18 comprises:

19 processing means for comparing the relative values of said two or more
20 signal-to-noise threshold values; and

21 processing means for selecting a data rate control set corresponding to the
22 lowest among said two or more signal-to-noise threshold values;

23 air-interface transmission means for transmitting a packet to an access terminal at
24 said selected downlink data rate;

25 processing means responsive to successfully decoding said packet for decreasing
26 the signal-to-noise threshold specified for said selected downlink data rate; and

processing means responsive to unsuccessfully decoding said packet for increasing the signal-to-noise threshold specified for said selected downlink data rate, said processing means for increasing the signal-to-noise threshold specified for said selected downlink data rate comprising:

processing means for computing an increased signal-to-noise threshold specified for said selected downlink data rate in accordance with the relation:

$$T = T_j - \Delta_{local}$$

wherein T represents the increased signal-to-noise threshold associated with the selected downlink data rate, T_j represents the current signal-to-noise threshold value associated with the selected downlink data rate, and Δ_{local} represents a local data rate control delta value.

12. (Original) The mobile communication system of claim 11, wherein said determined signal-to-noise level at said access terminal is a ratio of the signal strength of a pilot channel to the combined external signal strength.

13. (Original) The mobile communication system of claim 11, further comprising signal detection and processing means for determining a signal-to-noise level at each access terminal.

14-17. (Cancelled)

18. (Currently Amended) The mobile communication system of claim 11, ~~further comprising memory containing selectable data rate control sets in which each of said plurality of signal-to-noise threshold values is associated with a corresponding downlink data rate for said specified packet error rate, said mobile communication system~~ further comprising:

processing means responsive to unsuccessfully decoding said packet for increasing each of said plurality of signal-to-noise threshold values in accordance with the relation:

$$T = T_i + \Delta_{global}$$

6 wherein T represents the increased value for the i^{th} signal-to-noise threshold value
7 among said plurality of signal-to-noise threshold values, T_i represents current value for the i^{th}
8 signal-to-noise threshold value among said plurality of signal-to-noise threshold values, PER
9 ~~represents said specified packet error rate~~, and Δ_{global} represents a global data rate control delta
10 value.

1 19. (Currently Amended) A mobile ~~communication system for adaptively allocating~~
2 ~~a downlink data rate to an access terminal to compensate for channel fading, said mobile~~
3 ~~communication system~~ comprising:

4 ~~processing means for selecting a processor to select~~ a downlink data rate in
5 accordance with a determined signal-to-noise level, wherein said downlink data rate is associated
6 with a specified signal-to-noise threshold value to achieve a specified packet error rate;

7 the processor to send a data rate request containing the selected downlink data
8 rate to an access node over an uplink channel;

9 air-interface transceiver to receive ~~transmission means for transmitting~~ a packet
10 from the access node to an access terminal at said selected downlink data rate; and

11 the processor ~~processing means~~ responsive to successfully decoding said packet
12 ~~for decreasing to decrease~~ the signal-to-noise threshold value specified for said selected
13 downlink data rate, said ~~processing means for decreasing~~ wherein the signal-to-noise threshold
14 value specified for said selected downlink data rate ~~comprising~~ is decreased by:

15 ~~processing means for~~ computing a decreased signal-to-noise threshold value
16 specified for said selected downlink data rate in accordance with the relation:

$$T = T_j - (PER * \Delta_{local})$$

18 wherein T represents the decreased signal-to-noise threshold value associated with
19 the selected downlink data rate, T_j represents the current signal-to-noise threshold value
20 associated with the selected downlink data rate, PER represents said specified packet error rate,
21 and Δ_{local} represents a local data rate control delta value.

1 20. (Currently Amended) The mobile access terminal ~~communication system~~ of
2 claim 19, further comprising memory for storing selectable data rate control sets in which each
3 of said plurality of signal-to-noise threshold values is associated with a corresponding downlink
4 data rate for said specified packet error rate, ~~said mobile communication system further~~
5 ~~comprising:~~

6 ~~processing means~~ the processor responsive to successfully decoding said packet
7 ~~for decreasing~~ to decrease each of said plurality of signal-to-noise threshold values in accordance
8 with the relation:

$$T = T_j - (PER * \Delta_{local})$$

9
10 wherein T represents the decreased signal-to-noise threshold, T_i represents the i^{th}
11 signal-to-noise threshold value among said plurality of signal-to-noise threshold values, PER
12 represents said specified packet error rate, and Δ_{global} represents a global data rate control delta
13 value.

1 21. (New) The method of claim 9, further comprising responsive to unsuccessfully
2 decoding the packet, increasing the signal-to-noise threshold value specified for the selected
3 downlink data rate.

1 22. (New) The mobile access terminal of claim 19, the processor responsive to
2 unsuccessfully decoding the packet to increase the signal-to-noise threshold value specified for
3 the selected downlink data rate.